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U.S. Patent Application Serial No. 10/541,499  
Response filed August 12, 2010  
Reply to OA dated May 17, 2010

**REMARKS**

Claims 1-3, 5-7, and 9-12 are pending in this application. No amendment is made in this Response. It is believed that this Response is fully responsive to the Office Action dated May 17, 2010.

Claims 1-3, 5-7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hojo et al (US 6,254,905 B1) in view of the combination of Koumarianos (US 6,488,957) and Grossman (About.com, "Facts About Iron" pp.1-5 <http://ibdicrohns.about.com/cs/nutrition/a/fdairon.html>) and Klahorst ("Calcium, An Important Nutrient" pp. 1-5 [http://www.ifanca.org/newsletter/2001\\_05.htm](http://www.ifanca.org/newsletter/2001_05.htm)). (Office action p. 2)

The rejection of claims 1-3, 5-7 and 9-12 is respectfully traversed and reconsideration is requested.

The Examiner states on page 3, lines 3-16 of the Office Action as follows:

"Applicant's argument is not convincing as Hojo (Column 8 lines 34-43) teaches that the calcium ion concentration is balanced for stability and preventing damage of the proteins and gelling of the food composition; Hojo teaches that too little can cause instability and that too much can cause damage to the food proteins and gelling; Hojo teaches that the calcium ion concentration is about 10-500, wherein the calcium ion concentration is obtained by adjusting a solid matter concentration of calcium to 10% by weight after pulverization and/or dispersion. Thus, as previously stated, it would have been obvious to one of ordinary skill in the art at the time the invention was made to decrease the calcium ion concentration at or below 10 if at levels at and below 10 the composition was stable and in order to ensure that protein destruction and gelling of the food composition was prevented. To balance a known composition

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based on known effects and needs would have been obvious and routine determination of one of ordinary skill in the art at the time the invention was made."

However, Hojo et al. discloses at column 8, lines 34-42 as follows:

**"If the calcium ion concentration M (mg/l) is less than 10, the surface stability of the calcium agent is unstable and the calcium agent becomes easy to aggregate again, so that when the food additive slurry composition is added to cow's milk or the like, the stable product is difficult to be obtained. If it is more than 500, when the food additive slurry composition is used for cow's milk, the product tends to increase in viscosity due to the stability of protein being damaged, and in a worst case, it occasionally gels." (emphasis added)**

It is apparent from the above that Hojo et al. clearly denies and teaches away from the calcium ion concentration M (mg/l) being less than 10.

Moreover, with such high calcium ion concentration as disclosed by Hojo et al., Hojo's composition is not used in usages such as a portion for coffee needing a long relishing period of approximately 60 to 90 days.

The present specification discusses this issue regarding Hojo et al. on page 3, lines 13-25 as follows (WO 98-42210 corresponds to Hojo et al.):

"Moreover, the present inventors propose in WO 98-42210 a calcium suspension comprising a mixture of a calcium agent such as calcium carbonate and calcium phosphate with gum arabic.

When these methods are used, it is possible to obtain a product with a stable quality which is difficult to precipitate in a certain period of time. However, for example, when a product obtained by those methods is added to a portion for coffee, there is no problem with respect to quality immediately after preparation, but thickening with a lapse of time, in a worse case, gellation takes place during storage and thus it has a drawback that it is not used in usages such as a portion for coffee needing a relishing period of approximately 60 to 90 days."

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The present invention has solved the above problems involved in Hojo et al. by adding a chelating agent so as to control the calcium ion concentration M (mg/l) to less than 10. That is, according to the present invention, gelling of a portion and the like needing a long relishing period is prevented and the problems such as surface instability and re-aggregation of the calcium agent are also solved.

In support of this, Applicant has reproduced examples of Hojo et al. and presents data regarding these examples and comparative data in the attached Declaration under 37 CFR 1.132 by Hisakazu HOJO, signed August 10, 2010.

In the attached Declaration, in Experiments 1 and 2, a chelating agent is not contained and thus the obtained food additive slurry compositions have high calcium ion concentrations M (mg/l): 151 and 15, respectively.

In Experiments 3 and 4, calcium-enriched whiteners are prepared using the food additive slurry compositions obtained by Experiments 1 and 2, but both whiteners gel even after 7 days.

In contradistinction, the calcium-enriched whitener obtained by Example 31, in which the food additive slurry composition obtained by Example 1, having a calcium ion concentration M (mg/l) being 1.0 controlled by addition of a chelating agent, is evaluated "4" (i.e., precipitate is rarely observed) even after 3 months.

Moreover, with respect to flavor, the calcium-enriched whiteners obtained by Experiments 3 and 4 are evaluated "3" (flavor is slightly bad, i.e., unpleasantness is somewhat felt) while the calcium-enriched whitener obtained by Example 31 is evaluated "5" (Flavor is good).

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Meanwhile, the food additive slurry composition obtained by Example 14 contains a chelating agent and has a calcium ion concentration  $M$  (mg/l) being 12 which exceeds the upper limit  $< 10$ .

The calcium-enriched whitener obtained by Example 44 containing the food additive slurry composition obtained by Example 14 is inferior to that of Example 31 containing the food additive slurry composition obtained by Example 1 in amount of precipitate, state and flavor, but no gelation takes place, which is different from Experiments 3 and 4 containing the food additive slurry compositions obtained by Experiments 1 and 2 not containing a chelating agent.

Meanwhile, Example 14 and Example 44 are actually Comparative Examples since the calcium ion concentration  $M$  (mg/l) is 12, which is outside of  $0 \leq M < 10$  as claimed.

As is apparent from the foregoing, the food additive composition of the present invention can provide a food such as portion (whitener for coffee) which is excellent in stability (less amount of precipitate), state and flavor by controlling a calcium ion concentration  $M$  (mg/l) to  $0 \leq M < 10$ .

These marked results are attributed to the point as below:

As is addressed by Hojo et al, a product such as cow's milk containing animal proteins has some reactivity with calcium ion but does not gel within a given amount of calcium ion. That is, in such a product, the permissible range of calcium ion is high with respect to gelling and viscosity increase and thus the food additive composition can be used even with a high calcium ion concentration.

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In contrast, as is addressed by the present invention, a product such as portion (whitener for coffee) and soy milk containing vegetable proteins has high reactivity with calcium ion, and therefore, a stable product cannot be obtained unless a calcium ion concentration is considerably reduced.

### Conclusion

In summary, the present invention has solved the problem involved in Hojo et al. that a food additive composition cannot be used in a product such as portion by adding a chelating agent so as to control a calcium ion concentration  $M$  (mg/l) to  $0 \leq M < 10$ .

Hojo et al. does teach a calcium ion concentration  $10 < M \leq 500$  and clearly teaches away from concentrations  $< 10$  for the reasons that the surface stability of the calcium agent is unstable and the calcium agent becomes easy to aggregate again.

Therefore, it is apparent that Hojo et al. does teach away from a calcium ion concentration of less than 10, and thus, the Examiner's arguments that values below 10 would be obvious are incorrect. Claims 1-3, 5-7 and 9-12 are not obvious over the cited references.

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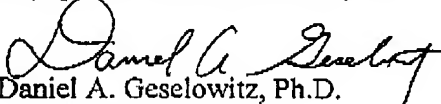
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Declaration under 37 CFR 1.132 signed by Mr. Hisakazu HOJO

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